

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 17, 2024

Jacob Whritenour
Tasman Geosciences
6855 W. 119th Ave.
Broomfield, CO 80020
RE: Noble - Vern Marshall 1
Work Order #2401033

Enclosed are the results of analyses for samples received by Summit Scientific on 01/03/24 17:49. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Jacob Wood For Paul Shrewsbury
President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN


Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@4'	2401033-01	Soil	01/03/24 11:10	01/03/24 17:49
BH01@8'	2401033-02	Soil	01/03/24 11:15	01/03/24 17:49
BH02@4'	2401033-03	Soil	01/03/24 10:02	01/03/24 17:49
BH02@8'	2401033-04	Soil	01/03/24 10:12	01/03/24 17:49
BH03@4'	2401033-05	Soil	01/03/24 09:14	01/03/24 17:49
BH03@8'	2401033-06	Soil	01/03/24 09:26	01/03/24 17:49
BH04@4'	2401033-07	Soil	01/03/24 10:43	01/03/24 17:49
BH04@8'	2401033-08	Soil	01/03/24 10:49	01/03/24 17:49
BH05@4'	2401033-09	Soil	01/03/24 10:51	01/03/24 17:49
BH05@8'	2401033-10	Soil	01/03/24 10:59	01/03/24 17:49
BG01@4'	2401033-11	Soil	01/03/24 09:30	01/03/24 17:49
BG01@8'	2401033-12	Soil	01/03/24 09:45	01/03/24 17:49
BG02@4'	2401033-13	Soil	01/03/24 09:20	01/03/24 17:49
BG02@8'	2401033-14	Soil	01/03/24 09:35	01/03/24 17:49
BG03@4'	2401033-15	Soil	01/03/24 09:41	01/03/24 17:49
BG03@8'	2401033-16	Soil	01/03/24 10:05	01/03/24 17:49
BG04@4'	2401033-17	Soil	01/03/24 11:27	01/03/24 17:49
BG04@8'	2401033-18	Soil	01/03/24 11:32	01/03/24 17:49
BG05@4'	2401033-19	Soil	01/03/24 11:15	01/03/24 17:49
BG05@8'	2401033-20	Soil	01/03/24 11:32	01/03/24 17:49

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Send Data To:		Send Invoice To:
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company:
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield/CO/ 80020		AFE#:
Phone: 937-554-5108	Project Name: <u>Vern Marshall</u>	PO/Billing Codes:
Sampler Name: Molly Parks	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS		HOLD
1	BH01 @ 4'	1-3-24	1110	2			X			X			X	X	X	X	X		X	SAR, EC, pH by saturated paste
2	BH01 @ 8'		1115				X			X			X	X	X	X	X		X	
3	BH02 @ 4'		1002				X			X			X	X	X	X	X		X	
4	BH02 @ 8'		1012				X			X			X	X	X	X	X		X	
5	BH03 @ 4'		914				X			X			X	X	X	X	X		X	
6	BH03 @ 8'		926				X			X			X	X	X	X	X		X	
7	BH04 @ 4'		1043				X			X			X	X	X	X	X		X	
8	BH04 @ 8'		1049				X			X			X	X	X	X	X		X	
9	BH05 @ 4'		1051				X			X			X	X	X	X	X		X	
10	BH05 @ 8'		1059				X			X			X	X	X	X	X		X	
11																				
12																				
13																				
14																				
15																				

Relinquished by: <u>MP</u>	Date/Time: <u>1-3-24/1642</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>1-3-24/1642</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>1324/1749</u>	Received by: <u>[Signature]</u>	Date/Time: <u>1324/1749</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>94</u>	Corrected Temperature: <u>9</u>	IR gun #: <u>1</u>	HNO3 lot #:			

Client: Noble/Tasman		Project Manager: Jake Whritenour		Company:	
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location:	
City/State/Zip: Broomfield/CO/ 80020		Project Name: <u>Vorn Marshall I</u>		AFE#:	
Phone: 937-554-5108		Project Number:		PO/Billing Codes:	
Sampler Name: Molly Parks				Contact:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS		HOLD	Arsenic
1	136-01@4'	1-3-24	930	2			X			X						X	X				SAR, EC, pH by saturated paste
2	136-01@8'		945																		
3	136-02@4'		920																		
4	136-02@8'		935																		
5	136-03@4'		941																		
6	136-03@8'		1005																		
7	136-04@4'		1127																		
8	136-04@8'		1132																		
9	136-05@4'		1115																		
10	136-05@8'		1132																		
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>MD</u>	Date/Time: <u>1-3-24/1624</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>1-3-24/1642</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>1-3-24/1749</u>	Received by: <u>[Signature]</u>	Date/Time: <u>1-3-24/1749</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>9.4</u>	Corrected Temperature: <u>5</u>	IR gun #:	HNO3 lot #:			

S₂

2/2
Sample Receipt Checklist

S2 Work Order# 2401033

Client: Noble Gasman Client Project ID: Vern Marshall 1

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) 9.4 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? (1) NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OUT OF
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water - is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? (1) Note the type of preservative in the comments column - HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? (1) Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

(1) If NO, then contact the client before proceeding with analysis and note in case narrative.

AS
Custodian Printed Name

1/3/24
Date/Time

23



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH01@4'
2401033-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHA0121	01/04/24	01/05/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0422	106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0429	107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0425	106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.99	63.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH01@4'
2401033-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0154	46.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0165	49.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH01@4'
2401033-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.45	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	71.8	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	16.6	0.0500	"	"	"	"	"	"	
Sodium	0.830	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0230	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.6		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0381	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN

Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH01@4'
2401033-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.71	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH01@8'
2401033-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHA0121	01/04/24	01/05/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0394	98.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0415	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0412	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.93	55.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Reported:
01/17/24 13:57

BH01@8'
2401033-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0139	41.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0157	47.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH01@8'
2401033-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.63	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	22.3	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	6.05	0.0500	"	"	"	"	"	"	
Sodium	16.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.776	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.2		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.165	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Vern Marshall 1
 Project Number: UWRWE-A3126-ABN
 Project Manager: Jacob Whritenour

Reported:
 01/17/24 13:57

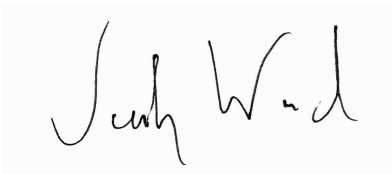
BH01@8'
2401033-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.46	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH02@4'
2401033-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHA0121	01/04/24	01/05/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0448	112 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0425	106 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0438	110 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	7.68	61.4 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH02@4'
2401033-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	0.00881	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0111	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00815	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0383	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0301	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0139	41.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0144	43.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH02@4'
2401033-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.28	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.8	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	6.95	0.0500	"	"	"	"	"	"	
Sodium	1.77	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0741	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0864	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH02@4'
2401033-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.18	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH02@8'
2401033-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHA0121	01/04/24	01/05/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0464	116 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0428	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0418	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.54	52.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH02@8'
2401033-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0100	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00676	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0135	40.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0135	40.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH02@8'
2401033-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.91	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.2	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	6.54	0.0500	"	"	"	"	"	"	
Sodium	14.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.734	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.1		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.167	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
 Project Manager: Jacob Whritenour

Reported:
 01/17/24 13:57

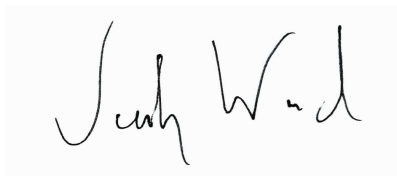
BH02@8'
2401033-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.46	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH03@4'
2401033-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHA0121	01/04/24	01/05/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0408	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0418	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.53	60.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH03@4'
2401033-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0163	48.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0163	49.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH03@4'
2401033-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.28	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	142	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	18.2	0.0500	"	"	"	"	"	"	
Sodium	5.07	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.106	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.7		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0827	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 09:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH03@4'
2401033-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.29	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH03@8'
2401033-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHA0121	01/04/24	01/05/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0425	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0422	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.47	51.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
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Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH03@8'
2401033-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0153	45.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0164	49.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH03@8'
2401033-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.50	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.2	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	5.29	0.0500	"	"	"	"	"	"	
Sodium	14.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.707	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.6		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.170	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 09:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
 Project Manager: Jacob Whritenour

Reported:
 01/17/24 13:57

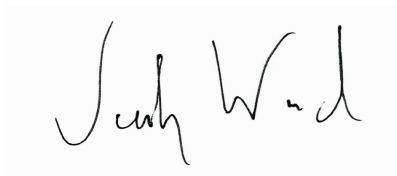
BH03@8'
2401033-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.52	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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6855 W. 119th Ave.
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Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH04@4'
2401033-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHA0121	01/04/24	01/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0388	97.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.60	52.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH04@4'
2401033-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0154	46.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0137	41.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH04@4'
2401033-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.04	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.8	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	5.55	0.0500	"	"	"	"	"	"	
Sodium	17.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.784	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.7		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.142	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
 Project Manager: Jacob Whritenour

Reported:
 01/17/24 13:57

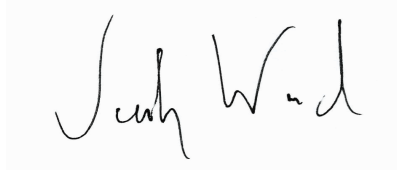
BH04@4'
2401033-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.53	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I

Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH04@8'
2401033-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHA0121	01/04/24	01/06/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0378	94.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.73	53.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH04@8'
2401033-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0160	48.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	51.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH04@8'
2401033-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.64	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12.4	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	5.18	0.0500	"	"	"	"	"	"	
Sodium	20.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.22	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.5		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.182	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
 Project Manager: Jacob Whritenour

Reported:
 01/17/24 13:57

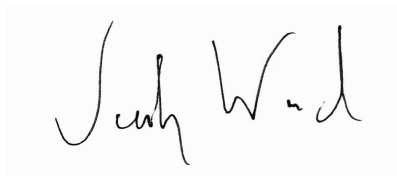
BH04@8'
2401033-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.64	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH05@4'
2401033-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHA0121	01/04/24	01/06/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0350	87.6 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0425	106 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	6.38	51.0 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH05@4'
2401033-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0140	42.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0151	45.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH05@4'
2401033-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.33	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	82.2	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	32.2	0.0500	"	"	"	"	"	"	
Sodium	5.34	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.126	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.9		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0386	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 10:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN

Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH05@4'
2401033-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	7.75	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH05@8'
2401033-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHA0121	01/04/24	01/06/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0372	93.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.5 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHA0123	01/04/24	01/05/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	6.56	52.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH05@8'
2401033-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0138	41.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0163	49.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0242	01/08/24	01/12/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BH05@8'
2401033-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.16	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.0	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	5.44	0.0500	"	"	"	"	"	"	
Sodium	15.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.854	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.1		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.160	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 10:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
 Project Manager: Jacob Whritenour

Reported:
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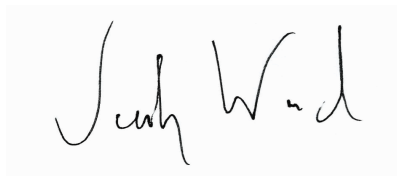
BH05@8'
2401033-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.62	pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG01@4'
2401033-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0166	49.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0178	53.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.975	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG01@4'
2401033-11 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	49.2	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	15.5	0.0500	"	"	"	"	"	"	
Sodium	2.35	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0748	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.9		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0212	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.83		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG01@8'
2401033-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0163	49.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0136	40.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.92	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG01@8'
2401033-12 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	14.8	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	5.95	0.0500	"	"	"	"	"	"	
Sodium	20.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.15	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.4		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.175	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.60		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG02@4'
2401033-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0180	53.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0222	66.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.19	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG02@4'
2401033-13 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.5	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	7.47	0.0500	"	"	"	"	"	"	
Sodium	1.57	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0632	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.6		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0234	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.48		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG02@8'
2401033-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/05/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0163	49.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0231	69.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.89	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG02@8'
2401033-14 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.1	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	5.95	0.0500	"	"	"	"	"	"	
Sodium	21.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.05	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.176	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.61		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG03@4'
2401033-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 09:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/05/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 09:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0139	41.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0162	48.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 09:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.66	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 09:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG03@4'
2401033-15 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	88.2	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	34.4	0.0500	"	"	"	"	"	"	
Sodium	28.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 09:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.640	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 09:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 09:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0838	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 09:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG03@8'
2401033-16 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/05/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0153	46.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0146	43.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.82	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG03@8'
2401033-16 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.2	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	5.67	0.0500	"	"	"	"	"	"	
Sodium	23.9	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.28	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.0		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.183	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.70		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG04@4'
2401033-17 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/05/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0186	55.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0174	52.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.75	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG04@4'
2401033-17 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	21.9	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	8.52	0.0500	"	"	"	"	"	"	
Sodium	35.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.62	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.9		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.232	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.24		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG04@8'
2401033-18 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/05/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0159	47.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0145	43.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.01	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG04@8'
2401033-18 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12.9	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	5.46	0.0500	"	"	"	"	"	"	
Sodium	29.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.71	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.7		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.214	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.67		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG05@4'
2401033-19 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/05/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0245	73.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0184	55.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.10	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG05@4'
2401033-19 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	39.9	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	7.11	0.0500	"	"	"	"	"	"	
Sodium	8.18	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.314	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.5		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.146	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.28		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG05@8'
2401033-20 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0116	01/04/24	01/05/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.59	0.200	mg/kg dry	1	BHA0210	01/05/24	01/12/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
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Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

BG05@8'
2401033-20 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	16.0	0.0500	mg/L dry	1	BHA0294	01/09/24	01/16/24	EPA 6020B	
Magnesium	9.06	0.0500	"	"	"	"	"	"	
Sodium	30.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.49	0.00100	units	1	BHA0613	01/17/24	01/17/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.0		%	1	BHA0204	01/05/24	01/05/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.205	0.0100	mmhos/cm	1	BHA0355	01/10/24	01/10/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/03/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.70		pH Units	1	BHA0353	01/10/24	01/10/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BHA0121 - EPA 5030 Soil MS

Blank (BHA0121-BLK1)

Prepared: 01/04/24 Analyzed: 01/05/24

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0368		"	0.0400		92.0	50-150				
<i>Surrogate: Toluene-d8</i>	0.0422		"	0.0400		105	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0419		"	0.0400		105	50-150				

LCS (BHA0121-BS1)

Prepared: 01/04/24 Analyzed: 01/05/24

Benzene	0.0872	0.0020	mg/kg	0.100		87.2	70-130				
Toluene	0.121	0.0050	"	0.100		121	70-130				
Ethylbenzene	0.112	0.0050	"	0.100		112	70-130				
m,p-Xylene	0.227	0.010	"	0.200		114	70-130				
o-Xylene	0.112	0.0050	"	0.100		112	70-130				
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100		107	70-130				
1,3,5-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130				
Naphthalene	0.0901	0.0038	"	0.100		90.1	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0358		"	0.0400		89.6	50-150				
<i>Surrogate: Toluene-d8</i>	0.0430		"	0.0400		108	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0397		"	0.0400		99.2	50-150				

Matrix Spike (BHA0121-MS1)

Source: 2401032-01

Prepared: 01/04/24 Analyzed: 01/05/24

Benzene	0.0864	0.0020	mg/kg	0.100	ND	86.4	70-130				
Toluene	0.113	0.0050	"	0.100	ND	113	70-130				
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130				
m,p-Xylene	0.221	0.010	"	0.200	ND	111	70-130				
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130				
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130				
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130				
Naphthalene	0.0890	0.0038	"	0.100	ND	89.0	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0402		"	0.0400		100	50-150				
<i>Surrogate: Toluene-d8</i>	0.0410		"	0.0400		102	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0407		"	0.0400		102	50-150				

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting		Spike Level	Source Result	%REC		RPD		Notes
	Result	Limit			Units	%REC	Limits	RPD	

Batch BHA0121 - EPA 5030 Soil MS

Matrix Spike Dup (BHA0121-MSD1)	Source: 2401032-01			Prepared: 01/04/24 Analyzed: 01/05/24						
Benzene	0.0864	0.0020	mg/kg	0.100	ND	86.4	70-130	0.0347	30	
Toluene	0.114	0.0050	"	0.100	ND	114	70-130	1.24	30	
Ethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130	4.28	30	
m,p-Xylene	0.233	0.010	"	0.200	ND	117	70-130	5.38	30	
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130	3.50	30	
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	5.05	30	
1,3,5-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	5.23	30	
Naphthalene	0.0918	0.0038	"	0.100	ND	91.8	70-130	3.12	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0373</i>		<i>"</i>	<i>0.0400</i>		<i>93.2</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			Limits	RPD	Limit		

Batch BHA0123 - EPA 3550A

Blank (BHA0123-BLK1)

Prepared & Analyzed: 01/04/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	13.4		"	12.5		107	30-150			

LCS (BHA0123-BS1)

Prepared & Analyzed: 01/04/24

C10-C28 (DRO)	430	50	mg/kg	500		86.1	70-130			
Surrogate: <i>o</i> -Terphenyl	9.67		"	12.5		77.3	30-150			

Matrix Spike (BHA0123-MS1)

Source: 2401032-01

Prepared & Analyzed: 01/04/24

C10-C28 (DRO)	437	50	mg/kg	500	14.0	84.7	70-130			
Surrogate: <i>o</i> -Terphenyl	7.27		"	12.5		58.1	30-150			

Matrix Spike Dup (BHA0123-MSD1)

Source: 2401032-01

Prepared & Analyzed: 01/04/24

C10-C28 (DRO)	455	50	mg/kg	500	14.0	88.3	70-130	4.04	20	
Surrogate: <i>o</i> -Terphenyl	7.72		"	12.5		61.8	30-150			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BHA0116 - EPA 5030 Soil MS

Blank (BHA0116-BLK1)

Prepared & Analyzed: 01/04/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0147</i>		"	<i>0.0333</i>		<i>44.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0236</i>		"	<i>0.0333</i>		<i>70.7</i>	<i>40-150</i>			

LCS (BHA0116-BS1)

Prepared & Analyzed: 01/04/24

Acenaphthene	0.0259	0.00500	mg/kg	0.0333		77.8	31-137			
Anthracene	0.0292	0.00500	"	0.0333		87.5	30-120			
Benzo (a) anthracene	0.0266	0.00500	"	0.0333		79.8	30-120			
Benzo (a) pyrene	0.0251	0.00500	"	0.0333		75.3	30-120			
Benzo (b) fluoranthene	0.0269	0.00500	"	0.0333		80.7	30-120			
Benzo (k) fluoranthene	0.0303	0.00500	"	0.0333		90.8	30-120			
Chrysene	0.0298	0.00500	"	0.0333		89.5	30-120			
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333		62.4	30-120			
Fluoranthene	0.0298	0.00500	"	0.0333		89.3	30-120			
Fluorene	0.0258	0.00500	"	0.0333		77.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333		61.5	30-120			
Pyrene	0.0308	0.00500	"	0.0333		92.5	35-142			
1-Methylnaphthalene	0.0215	0.00500	"	0.0333		64.6	35-142			
2-Methylnaphthalene	0.0330	0.00500	"	0.0333		98.9	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0199</i>		"	<i>0.0333</i>		<i>59.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0281</i>		"	<i>0.0333</i>		<i>84.4</i>	<i>40-150</i>			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BHA0116 - EPA 5030 Soil MS

Matrix Spike (BHA0116-MS1)	Source: 2401033-01			Prepared & Analyzed: 01/04/24							
Acenaphthene	0.0175	0.00500	mg/kg	0.0333	ND	52.6	31-137				
Anthracene	0.0178	0.00500	"	0.0333	ND	53.3	30-120				
Benzo (a) anthracene	0.0213	0.00500	"	0.0333	ND	63.9	30-120				
Benzo (a) pyrene	0.0167	0.00500	"	0.0333	ND	50.0	30-120				
Benzo (b) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.8	30-120				
Benzo (k) fluoranthene	0.0188	0.00500	"	0.0333	ND	56.5	30-120				
Chrysene	0.0163	0.00500	"	0.0333	ND	49.0	30-120				
Dibenz (a,h) anthracene	0.0169	0.00500	"	0.0333	ND	50.8	30-120				
Fluoranthene	0.0185	0.00500	"	0.0333	ND	55.6	30-120				
Fluorene	0.0183	0.00500	"	0.0333	ND	54.9	30-120				
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.5	30-120				
Pyrene	0.0176	0.00500	"	0.0333	ND	52.8	35-142				
1-Methylnaphthalene	0.0145	0.00500	"	0.0333	ND	43.5	15-130				
2-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.3	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0156</i>		<i>"</i>	<i>0.0333</i>		<i>46.7</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0182</i>		<i>"</i>	<i>0.0333</i>		<i>54.5</i>	<i>40-150</i>				

Matrix Spike Dup (BHA0116-MSD1)	Source: 2401033-01			Prepared & Analyzed: 01/04/24							
Acenaphthene	0.0177	0.00500	mg/kg	0.0333	ND	53.1	31-137	0.804	30		
Anthracene	0.0187	0.00500	"	0.0333	ND	56.2	30-120	5.34	30		
Benzo (a) anthracene	0.0229	0.00500	"	0.0333	ND	68.8	30-120	7.28	30		
Benzo (a) pyrene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	10.6	30		
Benzo (b) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.6	30-120	8.82	30		
Benzo (k) fluoranthene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	3.61	30		
Chrysene	0.0176	0.00500	"	0.0333	ND	52.7	30-120	7.32	30		
Dibenz (a,h) anthracene	0.0152	0.00500	"	0.0333	ND	45.7	30-120	10.6	30		
Fluoranthene	0.0197	0.00500	"	0.0333	ND	59.2	30-120	6.35	30		
Fluorene	0.0209	0.00500	"	0.0333	ND	62.8	30-120	13.4	30		
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.0	30-120	3.79	30		
Pyrene	0.0200	0.00500	"	0.0333	ND	60.0	35-142	12.7	30		
1-Methylnaphthalene	0.0166	0.00500	"	0.0333	ND	49.9	15-130	13.6	50		
2-Methylnaphthalene	0.0216	0.00500	"	0.0333	ND	64.7	15-130	3.96	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0181</i>		<i>"</i>	<i>0.0333</i>		<i>54.3</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0193</i>		<i>"</i>	<i>0.0333</i>		<i>57.9</i>	<i>40-150</i>				

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall I
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD	Limit	Notes
		Limit	Units			%REC	Limits			

Batch BHA0242 - EPA 3050B

Blank (BHA0242-BLK1)

Prepared: 01/08/24 Analyzed: 01/12/24

Boron ND 2.00 mg/L

LCS (BHA0242-BS1)

Prepared: 01/08/24 Analyzed: 01/12/24

Boron 5.38 2.00 mg/L 5.00 108 80-120

Duplicate (BHA0242-DUP1)

Source: 2401007-01

Prepared: 01/08/24 Analyzed: 01/12/24

Boron ND 2.00 mg/L 0.0150 200 20 QR-01

Matrix Spike (BHA0242-MS1)

Source: 2401007-01

Prepared: 01/08/24 Analyzed: 01/12/24

Boron 4.97 2.00 mg/L 5.00 0.0150 99.1 75-125

Matrix Spike Dup (BHA0242-MSD1)

Source: 2401007-01

Prepared: 01/08/24 Analyzed: 01/12/24

Boron 5.71 2.00 mg/L 5.00 0.0150 114 75-125 14.0 25

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BHA0210 - EPA 3050B

Blank (BHA0210-BLK1)

Prepared: 01/05/24 Analyzed: 01/12/24

Arsenic ND 0.200 mg/kg wet

LCS (BHA0210-BS1)

Prepared: 01/05/24 Analyzed: 01/12/24

Arsenic 35.0 0.200 mg/kg wet 40.0 87.4 80-120

Duplicate (BHA0210-DUP1)

Source: 2401033-01

Prepared: 01/05/24 Analyzed: 01/12/24

Arsenic 1.61 0.200 mg/kg dry 1.45 10.4 20

Matrix Spike (BHA0210-MS1)

Source: 2401033-01

Prepared: 01/05/24 Analyzed: 01/12/24

Arsenic 42.0 0.200 mg/kg dry 43.2 1.45 93.8 75-125

Matrix Spike Dup (BHA0210-MSD1)

Source: 2401033-01

Prepared: 01/05/24 Analyzed: 01/12/24

Arsenic 40.6 0.200 mg/kg dry 43.2 1.45 90.6 75-125 3.37 25

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BHA0294 - General Preparation

Blank (BHA0294-BLK1)

Prepared: 01/09/24 Analyzed: 01/16/24


Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BHA0294-BS1)

Prepared: 01/09/24 Analyzed: 01/16/24

Calcium	6.43	0.0500	mg/L wet	5.00		129	70-130			
Magnesium	5.51	0.0500	"	5.00		110	70-130			
Sodium	5.62	0.0500	"	5.00		112	70-130			

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Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
 Project Manager: Jacob Whritenour

Reported:
 01/17/24 13:57

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC			RPD	Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BHA0204 - General Preparation

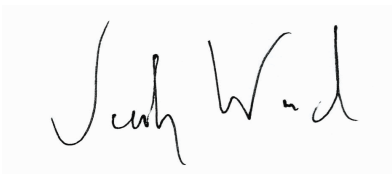
Duplicate (BHA0204-DUP1)

Source: 2401033-01

Prepared & Analyzed: 01/05/24

% Solids	92.3		%		92.6			0.344	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1
Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BHA0355 - General Preparation

Blank (BHA0355-BLK1)

Prepared & Analyzed: 01/10/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHA0355-BS1)

Prepared & Analyzed: 01/10/24

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

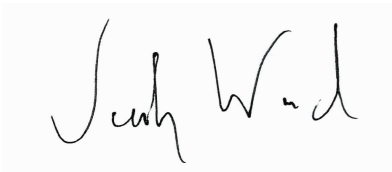
Duplicate (BHA0355-DUP1)

Source: 2401033-01

Prepared & Analyzed: 01/10/24

Specific Conductance (EC) 0.0380 0.0100 mmhos/cm 0.0381 0.421 20

Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC			RPD	Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BHA0353 - General Preparation

LCS (BHA0353-BS1)

Prepared & Analyzed: 01/10/24

pH 9.16 pH Units 9.18 99.8 95-105

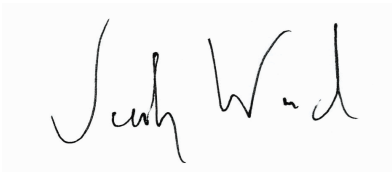
Duplicate (BHA0353-DUP1)

Source: 2401033-01

Prepared & Analyzed: 01/10/24

pH 7.73 pH Units 7.71 0.259 20

Summit Scientific



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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Vern Marshall 1

Project Number: UWRWE-A3126-ABN
Project Manager: Jacob Whritenour

Reported:
01/17/24 13:57

Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference